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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,997	03/07/2005	Ibrahim Sinan Akmandor	M013-5450 (PCT)	7993

40627 7590 12/21/2006
ADAMS & WILKS
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NEW YORK, NY 10004

EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
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3748

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/526,997

Applicant(s)

AKMANDOR ET AL.

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-43 is/are allowed.
- 6) ☒ Claim(s) 39 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed on November 13, 2006. Applicant's cooperation in correcting the informalities in the Abstract and Specification is appreciated.

Claims 1-38 were cancelled; and Claims 39-44 were newly added.

Claim Objections

Claims 39-41 are objected to because of the following informalities:

- In claim 39, lines 12 and 18-19; claim 40, lines 2-3; and claim 41, lines 3 and 5, ***"rotory"*** should be replaced by – **rotary** – (*for addressing typo error*).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 39-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Song (Patent Number EP 1 016 785 A1).

Song discloses a method of operating a heat engine having a sliding vane rotary vane compressor and a sliding vane rotary vane turbine (See Paragraph [0041]-[0042]), comprising the sequential steps of:

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a first step of intaking a fluid in an intake phase into a working chamber of the rotary vane compressor at ambient pressure;

a second step of compressing the fluid in a compression phase in the working chamber by rotating a rotor of the rotary vane compressor up to 360° of rotation;

a third step of mixing the compressed fluid with a fuel and igniting the mixture in an initial combustion phase in a combustion chamber external to both the rotary vane compressor and the rotary vane turbine to carry out a limited temperature constant volume combustion process;

a fourth step of subjecting the combustion products from the third step to a constant pressure combustion process in a final combustion phase followed by a power expansion phase in an expansion chamber of the rotary vane turbine by rotating a rotor of the rotary vane turbine up to 360° so that the pressure of the combustion products within the turbine expansion chamber reaches ambient pressure or near ambient pressure when the turbine expansion chamber volume reaches its maximum; and

a fifth step of exhausting the combustion products in an exhaust phase from the expansion chamber (See Paragraphs [0015]; [0043] – [0045]);

wherein for each 360° of rotation of the rotors of the rotary vane compressor and the rotary vane turbine, there are two complete and consecutive cycles of intake, compression, combustion, power expansion and exhaust phases (See Figures 6B-6C, 7-10, 12-14, Paragraphs [0031] - [0034]; [0041] - [0045]).

Claims 39-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Lai (Patent Number 5,596,963), Takashi (Patent Number 3,989,011), Miles et al. (Patent Number 4,553,513), or Bolonkin (Patent Number 6,526,937 B1).

Lai/Takashi/Miles/Bolonkin discloses method of operating a heat engine having a sliding vane rotary vane compressor and a sliding vane rotary vane turbine, comprising the sequential steps of:

a first step of intaking a fluid in an intake phase into a working chamber of the rotary vane compressor at ambient pressure;

a second step of compressing the fluid in a compression phase in the working chamber by rotating a rotor of the rotary vane compressor up to 360° of rotation;

a third step of mixing the compressed fluid with a fuel and igniting the mixture in an initial combustion phase in a combustion chamber external to both the rotary vane compressor and the rotary vane turbine to carry out a limited temperature constant volume combustion process;

a fourth step of subjecting the combustion products from the third step to a constant pressure combustion process in a final combustion phase followed by a power expansion phase in an expansion chamber of the rotary vane turbine by rotating a rotor of the rotary vane turbine up to 360° so that the pressure of the combustion products within the turbine expansion chamber reaches ambient pressure or near ambient pressure when the turbine expansion chamber volume reaches its maximum; and

a fifth step of exhausting the combustion products in an exhaust phase from the expansion chamber;

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wherein for each 360° of rotation of the rotors of the rotary vane compressor and the rotary vane turbine, there are two complete and consecutive cycles of intake, compression, combustion, power expansion and exhaust phases (See Figures 1 and 4, Column 3, lines 40-67, Columns 4-6, lines 1-67, and Column 7, lines 1-51 of Lai; Figures 1, 3-5, Column 1-4, lines 1-68, and Column 5, lines 1-10 of Takashi; Figures 1 and 3; Columns 1-9, lines 1-68, and Column 10, lines 1-15 of Miles; and Figures 5a-5b, 6, 8a-8b, and 9, and Column 3-5, lines 1-67, and Column 6, lines 1-17).

Response to Arguments

Applicant's arguments with respect to claims 39-43 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 41-44 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art fails to disclose or renders obvious the claimed combination of a compound propulsion engine including:

"a primary stage comprising an axial compressor having a rotary shaft defining an axial direction, a sliding vane rotary vane turbine driven by the existing compressed air and connected by an interconnecting shaft to rotationally drive the axial compressor; and

a secondary stage comprising an axial turbine having a rotary shaft extending in the axial direction and driven by the combustion products existing the combustor, and a sliding vane rotary vane compressor driven by the existing

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compressed air and connected by an interconnecting shaft to the axial turbine so as to be rotationally driven by the axial turbine."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Jirnov et al. (US Patent Number 5,839,270) disclose a sliding blade rotary air heat engine with isothermal compression air.

- Sabatella, Jr. et al. (US Patent Number 3,987,621) disclose a turbofan engine having a heater (40).

- Dooley (US Patent Number 3,780,530) discloses a jet engine having a duct heater (32).

- Roty (Patent Number FR 2 541 368 A) discloses an eccentric double rotor fluid pump or motor having a sliding vane contacting both rotors to achieve constant torque or flow.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB
December 14, 2006



Thai-Ba Trieu
Primary Examiner
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